small and irregular lamellæ. Tegmina wood-brown, more strongly humped than in the male, blackish on the hump, and whitish towards the base. Wings as in the male, except that the whole membranous area is brown, tessellated with irregular rows of large subhyaline spots.

Hab. W. Africa (*Swanzy*).

In the true *P. centaurus* the wings of the female are blackish, with the subhyaline spots much more numerous, much smaller, less confluent, and more regular.

XXXI.—*Descriptions of new West-African Frogs of the Genera* Petropedetes *and* Bulua. By G. A. Boulenger, F.R.S.

A few years ago * I had occasion to offer some remarks on the genus *Petropedetes*, Reichenow, and pointed out the differential characters of the three species then known, all three from West Africa, viz. *P. cameronensis*, Reichen., the type of the genus, with the toes half-webbed and the tympanum half the diameter of the eye; *P. Johnstoni*, Blgr., with a mere rudiment of web between the toes, and the tympanum half the diameter of the eye; and *P.* (*Tympanoceros*) *Newtoni*, Bocage, with a mere rudiment of web between the toes and with a very large tympanum, remarkable for the presence, in the male, of a dermal appendage projecting from its centre. I have since received examples of two new species, differing from those previously described in the fully webbed toes, and for these I propose the names *P. natator* and *P. palmipes*; the former is from Sierra Leone, the latter from South Cameroon. The genus *Bulua* was described by me quite recently † for a new frog from South Cameroon, *B. ventrimarmorata*; a second species, from the same country, may now be added, and is here described as *B. albiventris*.

Petropedetes natator.

Tongue rather feebly notched behind, without conical papilla. Vomerine teeth in two small groups close together behind the level of the choanæ. Head strongly depressed, a little broader than long; snout rounded, shorter than the

* P. Z. S. 1900, p. 439.

† Ann. & Mag. Nat. Hist. (7) xiii. 1904, p. 262.

orbit, with obtuse canthi and nearly vertical, concave lores; interorbital space as broad as the upper eyelid; tympanum moderately distinct, barely half the diameter of the eye. Fingers moderately elongate, much depressed, with large, cordiform terminal disks; first finger shorter than second; toes rather short, broadly webbed to the disks, which are a little smaller than those of the fingers; subarticular and inner metatarsal tubercles feebly prominent. The tibio-tarsal articulation reaches to between the eye and the tip of the snout; tibia half as long as head and body; foot about two fifths length of head and body. Upper parts closely covered with round granules intermixed with elongate warts; lower parts smooth. Male with internal vocal sacs, a sharp tooth-like process at the symphysial extremity of each ramus of the mandible, and a more or less distinct large oval gland on the lower side of the thigh. Olive-brown above, with round darker spots on the body and cross-bars on the limbs; lower parts brown.

From snout to vent 55 mm.

Several specimens from Sierra Leone, presented to the British Museum by Major F. Smith, R.A.M.C.

Major Smith informs me the specimens were taken from a mountain torrent in a rocky bed at an altitude of 800 feet. The frog is a powerful swimmer and jumper, and clings to rocks, roots of trees, &c. by means of its digital disks.

Petropedetes palmipes.

Tongue rather feebly notched behind, with a conical papilla in the middle. Vomerine teeth in two short transverse or oblique series behind the level of the choanæ. Head strongly depressed, as long as broad; snout obtusely pointed, a little shorter than the orbit, with obtuse canthi and very oblique concave lores; interorbital space narrower than the upper eyelid; tympanum rather indistinct, about one third the diameter of the eye. Fingers rather elongate, with large, cordiform terminal disks; first finger shorter than second; toes moderately elongate, webbed to the disks, which are a little smaller than those of the fingers; subarticular and inner metatarsal tubercles feebly prominent. The tibio-tarsal articulation reaches beyond the tip of the snout; tibia three fifths to two thirds as long as head and body; foot nearly half as long as head and body. Skin shagreened or glandular above; a more or less distinct glandular line along the middle of the head and body; lower parts smooth. Male with internal vocal sacs and a well-defined large oval gland

on the lower side of the thigh. Dark olive above, spotted or marbled with darker and lighter; limbs with broad dark and narrow light cross-bars; lower parts dirty white.

From snout to vent 53 mm.

Several specimens from Efulen, South Cameroon, collected by Mr. G. L. Bates.

Bulua albiventris.

Series of vomerine teeth nearly straight, widely separated in the middle, and not extending outwards beyond the choanæ. Head much depressed, broader than long; snout short, rounded; no canthus rostralis; eye moderate; interorbital region about once and a half as broad as the upper eyelid; tympanum very indistinct, its diameter about half that of the eye. Fingers short, with slightly swollen tips, first and second equal; toes moderate, the tips dilated into small disks; subarticular and inner metatarsal tubercles feebly prominent. The tibio-tarsal articulation reaches the posterior border of the eye. Skin smooth. Dark brown or black above, with small round white spots on the sides; hind limb with light spots or marblings; lower parts white, throat sometimes marbled with brown.

From snout to vent 25 mm.

Three specimens from Efulen, South Cameroon, collected by Mr. G. L. Bates.

XXXII.—*Remarks on Mr. N. Rosén's List of the Snakes in the Zoological Museums of Lund and Malmö.* By G. A. Boulenger, F.R.S.

The naming of snakes from descriptions is a difficult task for beginners, who should not be encouraged to publish descriptions of so-called new species, which only go to swell the synonymy. There is no book in existence by the aid of which the difficulties connected with the study of the dentition can be entirely overcome, and I doubt whether such a book will ever be written. I have done my best to supply a guide to the determination of snakes ('Catalogue of Snakes in the British Museum,' 1893–1896), and that it does not work in the hands of some students, as evidenced by Mr. Rosén's paper published in the last number of these 'Annals,' I deeply regret.